



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2016-8179; Directorate Identifier 2015-NM-201-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede Airworthiness Directive (AD) 2011-26-03, which applies to certain The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes. AD 2011-26-03 currently requires installing Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks. AD 2011-26-03 resulted from fuel system reviews conducted by the manufacturer. Since we issued AD 2011-26-03, we have received a report indicating that additional airplanes are affected by the identified unsafe condition. This proposed AD would add airplanes to the applicability. This AD would also add, for certain airplanes, detailed inspections of certain wire bundle clamps, certain Teflon sleeves, and certain fasteners; corrective actions if necessary; and installation of Teflon sleeves under certain wire bundle clamps. We are proposing this AD to prevent electrical arcing on the fuel tank boundary structure or inside the fuel tanks, which could result in a fire or explosion.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone: 206-544-5000, extension 1; fax: 206-766-5680; Internet: <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8179.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8179; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Suzanne Lucier, Aerospace Engineer, Propulsion Branch, ANM 140S, FAA, Seattle Aircraft Certification Office (ACO), 1601

Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: suzanne.lucier@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-8179; Directorate Identifier 2015-NM-201-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

The FAA has examined the underlying safety issues involved in fuel tank explosions on several large transport airplanes, including the adequacy of existing regulations, the service history of airplanes subject to those regulations, and existing maintenance practices for fuel tank systems. As a result of those findings, we issued a regulation titled “Transport Airplane Fuel Tank System Design Review, Flammability Reduction and Maintenance and Inspection Requirements” (66 FR 23086, May 7, 2001). In addition to new airworthiness standards for transport airplanes and new maintenance requirements, this rule included Special Federal Aviation Regulation No. 88 (“SFAR 88”), Amendment 21-78. Subsequently, SFAR 88 was amended by: Amendment 21-82 (67 FR 57490, September 10, 2002; corrected at 67 FR 70809, November 26,

2002) and Amendment 21-83 (67 FR 72830, December 9, 2002; corrected at 68 FR 37735, June 25, 2003, to change “21-82” to “21-83”).

Among other actions, SFAR 88 requires certain type design (i.e., type certificate (TC) and supplemental type certificate (STC)) holders to substantiate that their fuel tank systems can prevent ignition sources in the fuel tanks. This requirement applies to type design holders for large turbine-powered transport airplanes and for subsequent modifications to those airplanes. It requires them to perform design reviews and to develop design changes and maintenance procedures if their designs do not meet the new fuel tank safety standards. As explained in the preamble to the rule, we intended to adopt airworthiness directives to mandate any changes found necessary to address unsafe conditions identified as a result of these reviews.

In evaluating these design reviews, we have established four criteria intended to define the unsafe conditions associated with fuel tank systems that require corrective actions. The percentage of operating time during which fuel tanks are exposed to flammable conditions is one of these criteria. The other three criteria address the failure types under evaluation: single failures, combination of failures, and unacceptable (failure) experience. For all three failure criteria, the evaluations included consideration of previous actions taken that may mitigate the need for further action.

We have determined that the actions identified in this proposed AD are necessary to reduce the potential of ignition sources inside fuel tanks, which, in combination with flammable fuel vapors, could result in fuel tank explosions and consequent loss of the airplane.

On December 5, 2011, we issued AD 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011) (“AD 2011-26-03”), for certain The Boeing Company Model 777-200, -200LR, -300, and -300ER series airplanes. AD 2011-26-03 requires installing Teflon sleeving under the clamps of certain wire bundles routed along

the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks. AD 2011-26-03 resulted from fuel system reviews conducted by the manufacturer. We issued AD 2011-26-03 to prevent electrical arcing on the fuel tank boundary structure or inside the fuel tanks, which could result in a fire or explosion.

Actions Since AD 2011-26-03 Was Issued

Since we issued AD 2011-26-03, we have received a report indicating that additional airplanes are affected by the identified unsafe condition.

Related Service Information under 1 CFR part 51

We reviewed Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. The service information describes procedures for installing Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap sealing certain penetrating fasteners of the main and center fuel tanks; as well as detailed inspections of certain wire bundle clamps, certain Teflon sleeves, and certain fasteners; corrective actions if necessary; and installation of Teflon sleeves under certain wire bundle clamps. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

Proposed AD Requirements

This proposed AD would retain all of the requirements of AD 2011-26-03. This proposed AD would also revise the applicability by adding Boeing Model 777-200LR and 777F series airplanes. This proposed AD would also require accomplishing the actions specified in the service information described previously, except as described in

“Differences Between this Proposed AD and the Service Information”. For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-8179.

The phrase “corrective actions” is used in this proposed AD. “Corrective actions” correct or address any condition found. Corrective actions in an AD could include, for example, repairs.

Differences Between this Proposed AD and the Service Information

Boeing has issued Alternative Method of Compliance (AMOC) Notice 777-57A0050 AMOC 02, dated February 15, 2016, to provide the correct group applicability for “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon sleeve Installation,” Figure 3, and Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. We have included these changes in paragraphs (k)(1), (k)(2), and (k)(3) of this AD.

Costs of Compliance

We estimate that this proposed AD affects 182 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Install Teflon sleeving and cap sealing (retained actions from AD 2011-26-03)	Up to 358 work-hours X \$85 per hour = \$30,430	\$2,241	Up to \$32,671	Up to \$5,946,122
Detailed inspections and installation of Teflon sleeves (new proposed actions)	Up to 53 work-hours X \$85 per hour = \$4,505	\$0 ¹	Up to \$4,505	Up to \$819,910

¹ We have received no definitive data that would enable us to provide parts cost estimates for the installation of Teflon sleeves (new proposed action) specified in this proposed AD.

We have received no definitive data that would enable us to provide cost estimates for the on-condition actions specified in this proposed AD.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

- 2. The FAA amends § 39.13 by removing Airworthiness Directive (AD) 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011), and adding the following new AD:

The Boeing Company: Docket No. FAA-2016-8179; Directorate Identifier 2015-NM-201-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD replaces AD 2011-26-03, Amendment 39-16893 (76 FR 78138, December 16, 2011) (“AD 2011-26-03”).

(c) Applicability

This AD applies to The Boeing Company airplanes, certificated in any category, as identified in the applicable service information specified in paragraphs (c)(1), (c)(2), (c)(3), and (c)(4) of this AD.

(1) For The Boeing Company Model 777-200, -200LR, -300, -300ER, and 777F airplanes: Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015.

(2) For The Boeing Company Model 777-200 and -300 airplanes: Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006.

(3) For The Boeing Company Model 777-200, -300, and -300ER airplanes: Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007.

(4) For The Boeing Company Model 777-200, -200LR, -300, and -300ER airplanes: Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

(d) Subject

Air Transport Association (ATA) of America Code 57, Wings.

(e) Unsafe Condition

This AD was prompted by fuel system reviews conducted by the manufacturer. We are issuing this AD to prevent electrical arcing on the fuel tank boundary structure or inside the main and center fuel tanks, which could result in a fire or explosion.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Retained Corrective Actions (Installing Teflon Sleeving, Cap Sealing, One-Time Inspection), with Revised Service Information

This paragraph restates the requirements of paragraph (g) of AD 2011-26-03, with revised service information. Within 60 months after January 20, 2011 (the effective date of AD 2010-24-12, Amendment 39-16531 (75 FR 78588, December 16, 2010) (“AD 2010-24-12”)), do the applicable actions specified in paragraph (g)(1), (g)(2), (g)(3), or (g)(4) of this AD, except as required by paragraph (k)(2) of this AD.

(1) For airplanes identified in Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009: Install Teflon sleeving under the clamps of certain wire bundles routed along the fuel tank boundary structure, and cap seal certain penetrating fasteners of the fuel tanks, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009; or Revision 4, dated September 28, 2015. As of the effective date of this AD, only use Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, for accomplishing the actions required by this paragraph.

(2) For airplanes identified in Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006: Cap seal certain penetrating fasteners of the fuel tanks, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0051, dated May 15, 2006.

(3) For airplanes identified in Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007: Do a general visual inspection to determine if certain fasteners are cap sealed, and do all applicable corrective actions, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0057, Revision 1, dated August 2, 2007. Do all applicable corrective actions before further flight.

(4) For Model 777-200, -300, and -300ER airplanes identified in Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008: Cap seal the fasteners in the center fuel tanks that were not sealed during production, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

(h) Retained Cap Sealing the Fasteners, with No Changes

This paragraph restates the requirements of paragraph (i) of AD 2011-26-03, with no changes. For Model 777-200LR airplanes identified in Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008: Within 60 months after January 3, 2012 (the effective date of AD 2011-26-03), cap seal the fasteners in the center fuel tanks that were not sealed during production, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 777-57A0059, dated October 30, 2008.

(i) New Detailed Inspection and Corrective Actions

For Group 1, Configurations 2 through 4 airplanes; Groups 2 through 4, Configurations 3 through 5 airplanes; Groups 5 through 43, Configuration 1 airplanes; and Groups 44 and 45 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Within 60 months after the effective date of this AD, do the applicable actions specified in paragraphs (i)(1), (i)(2), and (i)(3) of this AD, except as required by paragraph (k)(2) of this AD.

(1) For Group 1, Configurations 2 through 4 airplanes; Groups 2 through 4, Configurations 3 through 5 airplanes; Groups 5 through 43, Configuration 1 airplanes; and Groups 44 and 45 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for installation of Teflon sleeves on certain wire bundle clamps, as applicable; a detailed inspection to determine the type of wire bundle clamp; and do all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050,

Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

(2) For Group 1, Configurations 2 through 4 airplanes; and Groups 2 through 4, Configurations 3 through 5 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for correct installation of certain Teflon sleeves, as applicable; and do all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

(3) For Group 1, Configurations 2 through 4 airplanes; and Groups 2 through 4, Configurations 3 through 5 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Do a detailed inspection for cap sealing of certain fasteners, as applicable; and do all applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015. Do all applicable corrective actions before further flight.

(j) New Installation of Teflon Sleeves

For Group 1, Configurations 2 through 5 airplanes; Groups 2 through 4, Configurations 3 through 6 airplanes; and Groups 5 through 43, Configuration 2 airplanes; as identified in Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015: Within 60 months after the effective date of this AD, install Teflon sleeves under certain wire bundle clamps, as applicable, in accordance with the Accomplishment Instructions of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, except as required by paragraphs (k)(1), (k)(2), and (k)(3) of this AD.

(k) Exception to the Service Information

(1) Where “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon sleeve Installation” of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 5 through 43, Configuration 2,” for this AD, “WORK PACKAGE 21: More Work: Rear Spar Wire Bundle Teflon sleeve Installation” of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to Groups 5 through 43.

(2) Where Figure 3 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 1 through 7, and 9 through 43,” for this AD, Figure 3 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to Groups 1 through 43.

(3) Where Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, specifies “Groups 5 through 43, Configuration 2,” for this AD, Figure 100 of Boeing Service Bulletin 777-57A0050, Revision 4, dated September 28, 2015, applies to Groups 5 through 43.

(l) Credit for Previous Actions

(1) This paragraph provides credit for the actions specified in paragraph (g)(1) of this AD, if those actions were performed before January 20, 2011 (the effective date of AD 2010-24-12), using Boeing Alert Service Bulletin 777-57A0050, dated January 26, 2006; or Revision 1, dated August 2, 2007; provided that the applicable additional work specified in Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009, is done within the compliance time specified in paragraph (g) of this AD. The additional work must be done in accordance with Boeing Service Bulletin 777-57A0050, Revision 2, dated May 14, 2009.

(2) This paragraph provides credit for the actions specified in paragraph (g)(3) of this AD, if those actions were performed before January 20, 2011 (the effective date of

AD 2010-24-12), using Boeing Alert Service Bulletin 777-57A0057, dated August 7, 2006.

(m) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (n)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs approved previously for AD 2011-26-03 are approved as AMOCs for the corresponding provisions of this AD.

(n) Related Information

(1) For more information about this AD, contact Suzanne Lucier, Aerospace Engineer, Propulsion Branch, ANM 140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: suzanne.lucier@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone: 206-544-5000, extension 1; fax: 206-766-5680; Internet: <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on July 8, 2016.

Michael Kaszycki,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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